AMENDMENTS TO THE CLAIMS

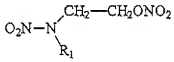
This listing of claims will replace all prior versions, and listings, of claims in the present application.

Listing of Claims:

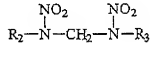
1-13. (**Canceled**)

14. (**Withdrawn**) High energetic material with layered grain structure, comprising a green powder which is unprocessed nitrocellulose powder and into which is introduced a high energy plasticizer and a polymeric deterrent,

wherein the high-energy plasticizer has the structure I or II, wherein $R_1 = C_1$-C_{10}-alkyl, C_1-C_{10}-alkoxy or aryl, R_2 and R_3 independently of each other is C_1-C_5-alkyl or C_1-C_5 alkoxy and is used in amounts of 5-20% relative to the green powder:



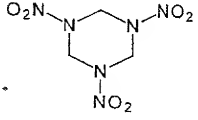
(I)



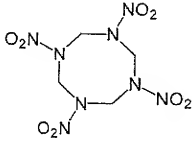
(II)

15. (**Withdrawn**) A high-energetic material according to claim 14, characterized in that the green powder is produced by extruding a solvent-containing dough of nitrocellulose, wherein

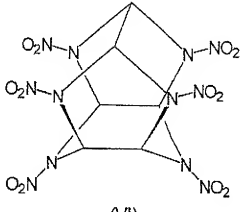
the solvent-containing dough contains at least one compound of the structures IV, V, or VI, which at least one compound comprises 10-60% of the dough (on a dry basis) wherein the formula of structures IV, V or VI are as follows:



(IV)

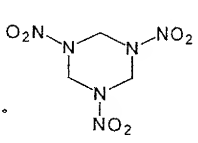


(V)

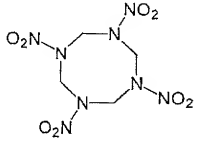


(VI)

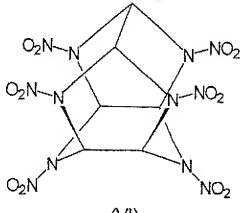
16. (**Withdrawn**) A green grain for producing a functional high-energetic material with layered grain structure, containing a high-energy plasticizer and a polymeric deterrent, wherein the green grain is formed by extruding a solvent-containing dough of nitrocellulose, characterized in that the solvent containing dough comprises at least one compound with the structure IV, V or VI and which comprise 10-60 % of the dough (dry basis)



(IV)



(V)



(VI)

17. (**Withdrawn**) A propellant powder comprising a high-energetic material in accordance with claim 14.

18. (**Withdrawn**) Ammunition comprising a propellant powder according to claim 17.

19. (**Currently Amended**) A method for producing a functional, high-energetic material having a layered grain structure and containing an energetic plasticizer and a polymeric desensitizer, comprising the steps of:

a) providing an energetic plasticizer in the form of a solution or in the form of an emulsion comprising water;

b) providing a polymeric desensitizer in the form of a solution or in the form of an emulsion comprising water;

c) providing a receptive grain which will absorb an emulsion,

d) ~~diffusing at least one emulsion comprising~~ wherein at least one of said energetic plasticizer or said polymeric desensitizer is in the form of an emulsion, and the emulsion diffuses into the receptive grain to produce the layered grain structure;

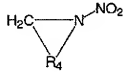
wherein said polymeric desensitizer is an organic ester or ether with a molecular weight of 100 to 100000.

20. (**Previously Presented**) The method according to claim 19, wherein the receptive grain comprises at least 80% nitrocellulose with a nitrogen content of 11-13.5%.

21. (**Previously Presented**) The method according to claim 19, wherein the receptive grain has a cylindrical structure with a diameter to length ratio of between 0.5 and 2.0, an outside diameter between 0.5 and 10 mm and contains at least one hole.

22. (**Previously Presented**) The method according to claim 21, wherein said at least one hole has a hole diameter between 0.03 and 0.7 mm.

23. (**Previously Presented**) The method according to claim 19, which further comprises producing the receptive grain by compressing a solvent-containing powder dough of nitrocellulose in a molding press or by extruding it, wherein the solvent-containing powder dough contains at least one substance with the general structure



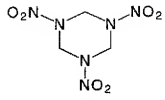
(III)

;

wherein $R_4 = (-CH_2\text{-}N\text{-}NO_2)_n$ and n = 2 or 3, wherein said at least one substance is present in an amount of 5-80% based on a dry weight of the powder dough.

24. (**Currently Amended**) The method according to ~~claim 23,~~ claim 19, wherein said at least one substance has a structure selected from the group consisting IV, V and VI,

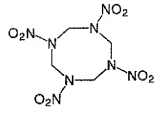
wherein IV is



(IV)

;

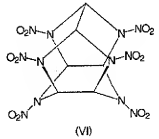
wherein V is



(V)

;

and wherein VI is



(VI)

;

and wherein the said at least one substance is present in the absorbent grain in an amount which is between 10-60%.

25. (**Previously Presented**) The method according to claim 19, wherein a diffusion depth of at least one of said energetic plasticizer or said polymeric desensitizer in the receptive grain is in the range of 100-500 μm.

26. (**Previously Presented**) The method according to claim 19, further comprising the steps of:

adding the energetic plasticizer in an organic solvent to a mixture of receptive grains in water; and

admixing the polymeric desensitizer in water.

27. (**Previously Presented**) The method according to claim 26, wherein the adding of the energetic plasticizer and the admixing of the polymeric desensitizer in water is undertaken at a temperature between 20-85°C.

28. (**Previously Presented**) The method according to claim 27, further comprising:

pre-soaking receptive grains in an organic solvent in a reactor; and

stirring during a period of 4-24 hours at a temperature of 20-85°C prior to adding the solution or emulsion of energetic plasticizer, which is liquid at room temperature.

29. (**Previously Presented**) The method according to claim 26, wherein the receptive grains are placed into 1 to 5 times the amount by weight of water.

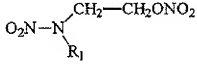
30. (**Previously Presented**) The method according to claim 26, which is conducted in a reactor tank, wherein after the step of admixing the polymeric desensitizer,

the pressure in the reactor tank is reduced to 400-800 mbar during a period of 2-6 hours to allow liquid components to drain out through a strainer in a bottom of the reactor tank; and

a resulting powder mass is dried with warm air.

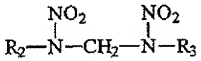
31. (**Previously Presented**) The method according to claim 30, wherein, after drying the resulting powder mass, 0.01-2% graphite is added in a polishing drum to the powder mass to obtain a bulk propellant powder with a bulk density > 1000 g/1.

32. (**Previously Presented**) The method according to claim 19, wherein the energetic plasticizer is selected from the group consisting of nitroglycerine, diethylene glycol dinitrate, a substance with the structure



(I)

and a substance with the structure



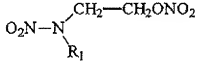
(II)

;

wherein R_1 = C_1-C_{10}-alkyl, C_1-C_{10}-alkoxy or aryl, R_2 and R_3 are each independent of each other and each is a C_1-C_5-alkyl or C_1-C_5-alkoxy; and

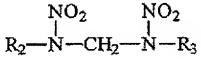
wherein the energetic plasticizer is added in an amount of 5-20% relative to the receptive grains.

33. (**Previously Presented**) The method according to claim 32, wherein the energetic plasticizer is selected from the group consisting of the following structures:



(I)

and



(II)

;

wherein R_1 = C_1-C_4 alkyl, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, or t-butyl, and

R_2 and R_3 are independent of each other and each is a C_{1-2} alkyl.

34. (**Canceled**)

35. (**Previously Presented**) The method of Claim 33, wherein each of R_2 and R_3 is independently methyl or ethyl.

36. (**Previously Presented**) The method of Claim 33, wherein R_1 is alkyl, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, or t-butyl.

37. (**Previously Presented**) The method of Claim 35 wherein R_1 is alkyl, methyl, ethyl, n-propyl, i-propyl, n-butyl, i-butyl, or t-butyl.

38. (**Previously Presented**) The method of Claim 19, wherein said energetic plasticizer in step a) is in the form of the solution.

39. (**Previously Presented**) The method of Claim 19, wherein said polymeric desensitizer in step b) is in the form of the solution.

40. (**Currently Amended**) A method for producing a functional, high-energetic material having a layered grain structure and containing an energetic plasticizer and a polymeric desensitizer, comprising the steps of:

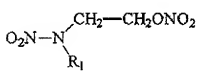
providing an energetic plasticizer in the form of a solution or in the form of an emulsion comprising water;

providing a polymeric desensitizer in the form of a solution or in the form of an emulsion comprising water, wherein said polymeric desensitizer is an organic ester or ether with a molecular weight of 100 to 100000;

providing a receptive grain which will absorb an emulsion,

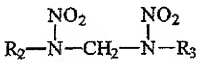
~~diffusing at least one emulsion comprising~~ wherein at least one of said energetic plasticizer or said polymeric desensitizer is in the form of an emulsion, and the emulsion diffuses into the receptive grain to produce the layered grain structure, wherein a diffusion depth of at least one of said energetic plasticizer or said polymeric desensitizer in the receptive grain is in the range of 100-500 μm;

wherein the energetic plasticizer is selected from the group consisting of nitroglycerine, diethylene glycol dinitrate, a substance with the structure



(I)

and a substance with the structure



(II)

;

wherein R_1 = C_1-C_{10}-alkyl, C_1-C_{10}-alkoxy or aryl, R_2 and R_3 are each independent of each other and each is a C_1-C_5-alkyl or C_1-C_5-alkoxy; and

wherein the energetic plasticizer is added in an amount of 5-20% relative to the receptive grains.

41. (**Previously Presented**) The method of Claim 40, further comprising the steps of:

adding the energetic plasticizer in an organic solvent to a mixture of receptive grains in water; and

admixing the polymeric desensitizer in water.

42. (**Previously Presented**) The method of Claim 41, wherein said method is conducted in a reactor tank.

43. (**Previously Presented**) The method of Claim 42, wherein after the step of admixing the polymeric desensitizer, the pressure in the reactor tank is reduced to 400-800 mbar during a period of 2-6 hours to allow liquid components to drain out through a strainer in a bottom of the reactor tank; and

a resulting powder mass is dried with warm air.

44. (**New**) The method according to claim 19, wherein both of said energetic plasticizer and said polymeric desensitizer are in the form of emulsions.

45. (**New**) The method according to claim 40, wherein both of said energetic plasticizer and said polymeric desensitizer are in the form of emulsions.